



Successful companies in every age use the most advanced technologies of the time to create value for their stakeholders. In today's knowledge economy, however, technology stands as both a formidable power and challenging dilemma for the hospitality industry. New advances in digital technologies connect the hospitality company within and to a global marketplace with an efficiency that

### Methodology

The research methodology used in two previous *Hospitality 2000* studies (*Hospitality 2000: The People and Hospitality 2000: A View To The Next Millennium*) was used. Following a review of the literature, a detailed questionnaire was prepared and pre-tested with a small sample of key technology executives within the industry. A convenient stratified

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## Hospitality 2000: The Technology Building customer relationships



would have been difficult to conceive just decades ago. Yet how much to invest—and what technologies to invest in—are among the most important decisions made by management. The way forward is not always obvious or easy.

This globally orientated research project *Hospitality 2000: The Technology* was designed to investigate technology issues confronting the industry in regards to its marketing and day-to-day operations. Like a prism that captures light from many angles, the study was designed to focus on multi-faceted global issues relating to technology and the hospitality organization. In addition to a comprehensive report on the data, findings and conclusions from the survey research, the full report also further examined hospitality organizations that were found to be pursuing cutting-edge technology innovations. However, the findings contained within this paper are initially focused on the aspects of technology and marketing. The paper then goes on to further examine the issues relating to the management of customer relationships using technology.

sample of hospitality industry executives in the Americas, Europe, the Middle East, India, Africa and Asia/Pacific was drawn, and a postal survey was used. A total of over 3,000 surveys were mailed and there were 333 responses. Of these, 87 percent reported responsibility for investments in IT, 41 percent worked at “parent” company headquarters, 7 percent at regional headquarters and 51 percent at individual hotels. Geographically, 84 percent of respondents were based in the Americas, 10 percent in EMEA (Europe, Middle East, India and Africa) and 5 percent in Asia/Pacific. Global chains were represented by 26 percent of respondents; regional chains by 13 percent; independent management companies by 39 percent, franchisors by 5 percent. Independent operators made up the balance for the most part. Responses were cross-tabulated by type and size of company to allow for the weighting of responses such those relating to planned investment in IT.



### Strategy and technology

The focus of this study was to probe the relationship of technology to strategy, including how technology strategy is developed, linked to the business plan and integrated into the organization. Such wide-ranging questions are particularly important given how technology systems have evolved as closed and often proprietary architectures that do not “speak” easily to each other. Today’s industry technology represents a legacy reflecting the computer industry’s capabilities during the last two decades and the willingness of hotel executives to embrace its products. Early systems were often custom-designed for proprietary application, and they have not always been successfully integrated. With varying vendor applications for different parts of the business, interface and integration have become key issues for many organizations.

Indeed, 82 percent of executives surveyed believe the closed architecture of the industry’s technology has had a negative financial impact on the industry and three quarters believe this will continue in the five years to come. Furthermore, about two-thirds of respondents believe that the industry’s technology advances have been slowed, as a result. Addressing the problem of standards in the industry is the American Hotel and Motel Association’s Hospitality Industry Technology Integration Standards (“HITIS”) project which is making progress toward the goal of mitigating the problem in future years—although as these survey results suggests, there remains plenty of concern within the industry’s leadership.

Setting the strategic direction for technology appears to fall to the senior executives of hospitality enterprises. Two-thirds of respondents indicate an involvement of the Chief Financial Officer, while Chief Information Officers following at 57 percent of companies. Other members of the senior management team involved in



technology strategy are CEOs (52 percent), General Managers (50 percent) and Chief Operating Officers (42 percent).

While most mission statements (92 percent) were found to have some reference to a “customer focus”, when it comes to technology, only a minority (28 percent) gave it reference as an element in the company’s mission. This suggests that while most hospitality companies are clear on their customer orientation, they are unsure of whether technology should be a principal driver to success. Predictably, the larger chains are more technology focused in their mission statements than are so-called “independent” (non-chain) companies.

This study also queried executives on issues relating to technology investment, a key issue for all organizations given the

cost of new technologies, as well as the conversion of older “legacy” systems. The quandary facing the industry is how to balance the need to keep up with technologies advances, while maintaining returns on capital over the short-term. During the last three years, hospitality organizations have spent the equivalent of 3.1 percent of their revenue on investments in information technology. During the next three years, they plan to increase this to approximately 4 percent of revenue—suggesting an approximate one-third increase in spending. As to what all the increased spending is going for, the top priority is for property management systems (PMS). This is followed in order of importance by yield management, reservation systems, sales and catering systems, e-mail/internet,



database marketing, point of sale, food and beverage, guestroom technologies and finally kiosks for check-in and check-out. These priorities suggest that the PMS will continue to dominate the technology scene for a while. This despite the fact that hospitality companies will inevitably need to focus their attention on fully integrated customer information systems that have PMS as a component part of but not at the center of such systems.

### **Technology in the organization**

The success of a company's technology strategy will require a firm commitment from all levels of the organization. The study addressed a range of issues relating to organizational impact, including the structure of the IT function within the organization, current and future methods of technology training, and how companies will be integrating their systems in the future.

As to integrating the ways in which people communicate and share their work, most hospitality organizations currently have Local Area Networks (LANs) within their hotels and if they don't they plan to by Year 2000. Less than half of the executives, however, report the use of so-called Wide Area Networks linking their hotels to their corporate offices. By Year 2000 some 62 percent plan to do so. Forty-two percent of the executives surveyed report their organizations have Intranets (a web-based internal network). But this should jump to 72 percent by Year 2000. And finally as to extranets that link to other companies' networks of suppliers or customers, 19 percent indicate they have such structures in place today with this ratio growing to close to one-half by Year 2000.

For hospitality companies that look for scale by having multiple units in so-called "chains", the issue of how they communicate with their employees, their customers, their vendors and their alliance partners will define their competitive

positioning as the world becomes ever-more "web-enabled." The above findings suggest, however, that most hospitality companies still have a long way to go in adopting a network-centric vision of the future. And in the future, there will likely be competitors that arise that are not currently on most industry radar screens or are not even in business today who will eventually be in a position to disintermediate the customer relationship. If this is the case, then the hospital-

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In terms of how technology organizations are structured, there is significant variation within the industry. Close to three-quarters of respondents indicate that their company has a separate IT department, whereas nearly one-quarter place IT responsibility with a key senior executive. A small minority has no internal function. They outsource IT needs to a third party. Of those with separate departments, the reporting lines vary—43 percent report to the company's CFO, while other senior executives are less involved (CEOs—17 percent; CIOs—17 percent; COOs—12 percent; and GMs—9 percent). For those without separate IT departments—mostly individual hotels—the property's controller or CFO tends to pick up the IT responsibility most of the time (61 percent) with general managers (GMs) trailing at 17 percent.

### **Sales and marketing**

In the customer-focused hospitality enterprise of the future, technology will play an increasingly important role in recognizing, evaluating and relating to the customer. This study examined the changing role of technology in the sales and marketing function by investigating evolving customer "touch-points," as well as the automation of the sales and marketing function. Customers have moved quickly to embrace new ways of

communicating with hospitality companies. The relative significance of some of the new customer access points provides an indication of where the industry's emphasis will be in the future. Predictably, our respondents rate web sites the most highly (3.8 out of a total score of 5). Smart Cards (3.2) and Kiosks for check-in and check-out (2.6) follow in ratings as access points.

As to smart cards and kiosks, some progress is being made but widespread industry adoption remains a long way off. On the smart card front, recent beta-testing in the US involved IBM, American Express and Hilton. The program used cards that retained their usual payment functionality, while offering additional, non-payment related features including kiosk-based room selection, room key issuance, bill review and receipt printing and the ability to change preferences and profile information. Hilton found, however, some guest resistance to actually using the card, particularly among those who still prefer the personal attention of, say, the front desk staff. The industry will



evidently need to build critical mass through broader deployment of smart cards before increased customer buy-in can be expected. The significant cost in switching from magnetic tape cards to smart card technology will also prove to be a hindrance.

As to kiosks, we are seeing increasing adoption particularly within what in the U.S. is called the “limited service”

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segment of the industry where properties focus on the rooms side of the business. Such properties are engineered to ensure operational integrity with very low employee counts. In this segment of the business, there appears to be growing acceptance by the customer.

The industry is evidently making significant progress in deploying technology into the sales function, with a 70 percent overall adoption rate for some form of sales automation. While the industry has clearly gone a long way in automating the sales process, its integration to property-level systems is lagging. Of those with some automation in the sales function, only one-half are integrated into their Property Management (PMS) systems.

While technology has clearly improved productivity within sales, less headway has been made in other areas of marketing. Provided with a series of application choices, just over half of the respondents (55 percent) indicate they currently have automated customer acquisition and retention analysis while three-quarters indicate they have plans for such automation by Year 2000.

As a big part of the industry’s “real estate” and the place where the customer expects not only comfort but convenience and service as well, the guestroom is where technology applications can and will provide competitive advantage. Voice mail is the dominant item with an 84 percent adoption rate among these organizations, with on-demand movies and dual phone lines

reported by two-thirds of respondents. In-room Internet access is next at 57 percent, with fax/copier/printers by 38 percent. Trailing are interactive television (26 percent), cordless phones (17 percent) and e-mail (16 percent).

Most companies (90 percent) have a web site on the Internet and for the minority that do not, the competitive pressure is clearly on full tilt. Indeed, virtually all of those without a current web site plan to have one within the next two years. The larger chains have clearly been the early adopters with the highest rate of web presence (92 percent), while smaller independent companies still have some modest catching up—they indicate an 85 percent presence.

Features at web sites vary, but most provide product information and detailed pictures of hotel properties (94 percent and 90 percent respectively). Location maps are provided by 78 percent. Approximately two-thirds provide links to other sites and product pricing, but only 39 percent report that they take reservations on a real-time basis however.

With the industry moving rapidly toward Internet offerings, the relative importance of distribution channels is set

to change dramatically in coming years. Today, an estimated 4 percent of all reservations are channeled through the Internet, but this is forecast to grow to 11 percent by Year 2000. Global Distribution Systems currently account for an estimated 14 percent of all reservations and should show moderate growth to 16 percent by year 2000. Central Reservation (CRS) Systems are projected to grow slightly from a current estimated share of 21 to 22 percent with hotel-based reservation departments (currently estimated at a 55 percent share and set to decline to 43 percent).

Integrating the rooms inventory of a hotel property into a central reservation in what is called a “single image” so that all reservation access points are showing the same status at the same time is an obviously productive deployment of technology in the hospitality industry. While today only 28 percent of respondents indicate their organizations have such a single image, some 47 percent indicate they plan to have such a system in place by Year 2000.

Integration of operational systems — many of which have been designed as proprietary, disparate or stand-alone applications—will remain one of the primary challenges for hospitality companies. Integrating PMS systems, which tend to be the center of the operational universe, with CRS systems, which historically have been the center of the sales and marketing universe, has been an important priority. The executives who responded reported that approximately 68 percent of PMS systems are integrated to a CRS with this ratio set to increase to 82 percent by Year 2000.

Yield management—which began life in the airline industry and has long since migrated to the hospitality business—is an important tool in the maximization of revenues. Its development has been largely facilitated with the deployment of technology against complex algorithms



that track historical data and project business volumes against key variables. Of Hospitality 2000 respondents, 60 percent indicate that their organizations have a yield management system of one type or another in place. And of these, nearly two-thirds are integrated into the organization's property management system while 41 percent are connected to the CRS. For those without a system, just over one-half report plans to develop one. In sum, it is clear that yield management systems are fast taking hold in the industry.

### **Customer information**

The study also explored how hospitality companies use technology to manage the customer relationship now and what organizations plan for the future. This is an area rich in potential, and a large number of issues were considered, including how organizations will integrate disparate systems with the customer. We also looked at how hospitality organizations will collect, evaluate and utilize customer information.

The executives surveyed, reported continuing efforts to integrate critical systems such as PMS and CRS. But as hospitality companies devote more attention to knowing their customers, they are considering the integration of not only PMS and CRS but also data warehouses into fully integrated Customer Information (CIS) Systems. But like the adoption of technology elsewhere in the industry, the pace is slow. Approximately 13 percent of respondents report that they have installed a CIS system; most have been introduced during the last several years. Another 11 percent have a plan for a CIS and the capital allocated (mostly for completion within the next three years). An additional one-half of respondents report having considered the development of a CIS and the possibility of putting a plan together.

Such plans though can be expensive. For those with the capital allocated,

approximately one-half indicate that their systems will cost anywhere from \$1 million to \$6 million with the balance reporting an expenditure of less than \$1 million. Clearly there is significant variation. For large chains, the expenditures can significantly exceed these figures, depending, of course, on the features involved and the state of their current technology particularly as it relates to consistency of systems especially at the property level.

### **Knowing who your customers is one thing, but understanding whether they are satisfied is clearly another.**

Knowing who your customers is one thing, but understanding whether they are satisfied is clearly another. And the profile of methods being used currently is not especially encouraging. In-room questionnaires—the industry standard for decades—remains the dominant form currently (41 percent of all applications), followed by mail surveys (27 percent), in room television surveys (14 percent), telephone surveys following checkout (10 percent) and computerized survey upon checkout (7 percent).

By Year 2000, the distribution is expected to change with in-room questionnaires set to decline to 28 percent along with mail surveys (22 percent). Offsetting the decline is the rise of in-room TV surveys (20 percent) and computerized surveys at checkout (15 percent). Post departure telephone surveys will continue to trail at 10 percent.

The approaches to determining customer loyalty should also be of importance to those organizations that place the customer at the center of their universe. Almost two-thirds of respon-

dents indicate that they track loyalty and 41 percent use variations of an analysis of spending or stays, while a minority (17 percent) track points or coupon redemption. And for those not currently tracking loyalty, close to three-quarters plan to do so in the future.

As the industry develops a greater focus around the customer, the need for data-warehousing becomes increasingly apparent. In large and complex hospitality organizations, it is only with the application of sophisticated technology that customer data can be collected, evaluated, analyzed and used to good purpose. Currently about one-third of respondents indicate the existence of a data warehouse within their organization but of those without, close to one-half indicate plans to install one, mostly within the next three years. Yet for those with a data warehouse in place, less than one-third report it being linked to an Executive Information System. This suggests that for senior sales and marketing management, access is episodic and inhibited by the need for technical help. There would therefore appear to be a large opportunity for those interested in increasing the productivity and utility of the information they collect. For many of the larger companies in the industry, "Customer Relationship Management or CRM" has become somewhat of a corporate mantra. But how best to integrate CRM into a company's IT and marketing strategy is clearly a challenge.

### **Integrating Customer Relationship Management**

Customer Relationship Management can generate substantial profits, but it requires large volumes of easily accessed and analyzed information. While some hospitality companies are creating customer databases, the use of customer information is frequently intermittent, delayed and disintegrated.

Most hospitality companies tend to rely on property-based occupancy, rate and



financial data to benchmark against competitors and industry trends. Some companies generate information to measure customer satisfaction and use loyalty program databases to determine their most valuable customers. These data and analyses are badly flawed, however, because they give a far from comprehensive (or even realistic) view of real value in the business. Business plans that rely on property-based data to support capital and resource allocations run the risk of failure because they do not take into account all of the company's value drivers, particularly its many levels

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of customer assets. Similarly, loyalty program databases are often inaccurate because they frequently do not include the most profitable, or sometimes even the most loyal, customers.

For hospitality companies, a CRM System (CRMS) should identify the customer value drivers, modify customer behavior toward greater profitability, increase delivery efficiency, and decrease fraud and transaction errors. Such a system should also eliminate waste caused by over-providing to some customers and filling in the gaps where the needs of other customers are not being met. Finally, a CRMS should generate greater profitability by making it possible to evaluate the net economic benefit of different customer segments and support development of a strategy that uses that information to greatest effect. For example, a key customer segment might be small in size, but represent significant per capita revenue with lower costs than a larger group that with low per capita revenues and higher

per capita costs. With such information, management can reallocate company resources accordingly.

In a technology-based solution, automated sales and marketing systems speed the process of going to market and improve the cycle time. "Longitudinal marketing" (for example a sequence of offerings driven by time or customer behavior) and "trigger-based," multi-stepped sales campaigns (e.g. those that are triggered by certain customer actions) are facilitated, while the cost of customer acquisition, sales, and marketing service support is reduced. For franchisors,

revenues grow from improved tracking of customer spending and franchise fees.

A customer equity strategy requires several tools to build market intelligence, including an automated process of continuous customer valuation. Such information would need to be widely available to executives on a continuous basis to facilitate daily decision-making. A "value-driver" analysis identifies those behavioral, demographic, psychographic and economic factors that create customer value. A market share analysis identifies the hospitality company's most valuable customers, those who spend significant funds with competitors and how to best target them to gain greater market share.

#### **Leveraging technology**

An integrated CRMS automates information searches with accessible and easy to manipulate end-user interfaces, which may be structured as Intranet browser-based solutions. The objective is to capture a single view of the customer

that brings together a wealth of information from a wide variety of sources and places it into actionable formats that support management decisions.

Customers touch hospitality businesses in a variety of different places. They connect with the company through the Internet and direct mail. They speak with sales people by phone and in person, with operators at the central reservation system, with receptionists upon check-in at the hotel, with service staff during their stay, and with cashiers upon their check-out.

At each of these so-called "touch-points," hospitality companies can gather and integrate information into a system that provides a comprehensive singular view of the customer. The system can then be supplemented with additional information gleaned from subsequent interactions and can be enhanced by appending externally generated data.

There are, of course, significant hurdles in establishing a fully integrated CRM system. The quality of customer information in many hospitality organizations is often poor, the potential volume overwhelming, integration complex and accessibility frequently difficult at best. Rather than launching a comprehensive data warehousing solution, "meta-data"—or subsets of data in a "data-mart"—can be very useful in piloting CRM solutions. Sampling techniques and predictive modeling can be sufficient for a number of key sales and marketing functions that can bring significant quick wins early in the process.

A data-mart is an effective way to begin targeting the most valuable customers and understanding the tasks that management should focus on. In effect, a data mart helps a company become customer-oriented without the large up-front costs of investing in a complete data warehouse. A data mart is a repository of data gathered from operational data and other sources that is designed to serve a particular community



of people. In scope, the data may derive from an enterprise-wide database or data warehouse or be more specialized. The emphasis is on meeting particular needs in terms of analysis, content, presentation, and ease-of-use.

From this foundation, the company can build an accessible multi-channel data warehouse that integrates the customer touch-point system and still provides the ease of access management needs to effectively leverage the customer information, whether it be for marketing campaigns, expansion plans, or new product introductions.

### **The principal elements of the CRS**

In a fully integrated Customer Relationship Management System, there are a number of key features that may be summarized as follows:

**Value Driver Analysis**—undertaken to determine those behavioral, demographic, psychographic and economic factors that create value in the customer.

**Share-of-Wallet Analysis**—a campaign to understand which customers, of the most valuable segment, spend significant funds with competitors and how to target these customers to gain more of their share of wallet.

**Campaign Management**—longitudinal and trigger-based campaign management. This involves the automation of sales and marketing campaigns that are keyed to significant events allowing sales management across the lifetime of a customer rather than as a singular event. These campaigns are triggered based upon behavior that is observed during the course of business. The campaigns are also designed to reinforce customers to behave more profitably.

**Retention/Attrition Analysis**—undertaken to determine the degree of retention and attrition by different customer types and the related costs.

**Cross-selling Analysis**—the opportunity for increasing share of wallet with additional products and services of both

the companies in question and its strategic alliance partners. Helps assess if a customer purchases X, he or she will be a likely target for Y. Benchmarking provides the ability to assess individual properties against their stated competition for the ownership of the customer relationship.

**Customer Acquisition Analysis**—summarizes the demographic, behavioral, and attitudinal patterns of most profitable customers and supplies sources for identifying more of these types of customers.

**Forecasting**—understanding the loyalty of customer segments as well as their historic behavior begins to allow the

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hospitality company to forecast the value of new product introductions, selling others products, or acquiring and servicing new customers.

**Fraud and Error Reduction**—A fully integrated PMS/CRS system as well as a secure value added network will allow a company to begin to do business with its alliances and partners and at the same time track transaction histories so that accounting errors and fraud by partners and alliances are decreased.

**Customer Recognition and Preference Systems**—identify customers at each touch-point, determine the preferences of different customers and provide higher levels of service.

For those companies committed to a singular focus around the customer—an orientation now well understood as a key driver to success—the investment in sophisticated IT solutions to Customer Relationship Management will make all

the difference. But such investment will require the careful development of a business case that articulates the benefits to be derived from such a system and the associated cost of getting there. Without such a business case in place, it will in the end be difficult to monitor the progress being made by investing in the customer assets of the enterprise.

### **Conclusion**

Clearly, the stakes are high for hospitality organizations when it comes to investing well and wisely in technology. No organization can afford to be left in the wake on these issues. But executives

surveyed seem well aware that how they invest in and use new tools and systems influences cost, effectiveness and the company's competitiveness in a technology-rich world. As consumers choose from a growing array of hospitality products—and channels of distribution—these technologies must support a customer-focused enterprise as never before.

Hospitality companies are clearly not in the technology business. But there will clearly be a price for organizations that do not keep up with customer service and operational efficiencies that technology makes possible. That raises significant questions in terms of investments. Is there a cost for investors supporting lower forms of technology in hotels in terms of competitive disadvantage? Will capital availability draw an even wider line between the technology “haves” and “have-nots” in the industry? And how can



such a competitive disadvantage be mitigated?

In the future, hospitality managers will clearly be called upon to increase their spending on technology. Such investments will be critical for both process improvement and customer relationship management. And since it is the customer who is after all the ultimate arbiter of a company's success or failure, managers need to ensure that their priorities in this area are tightly focused and on target. The next big technology cycle will in all probability focus on systems that bring customer, statistical

and financial information together through an integration of property management, central reservations, data warehouse and distributed database systems. In the end, however, hospitality managers must recognize that technology and information alone confer no competitive advantage. Leadership and sound planning will be required to ensure that investments in IT and the information they generate ultimately produce the shareholder returns required while allowing hospitality organizations to build the customer relationships they will need for success in the future.



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